

**2000**

**Pima County, Arizona**

**Indicators of  
Neighborhood  
Stress**

**Measures of Need and Dependency  
From Census 2000  
For Pima County Block Groups**

**Compiled by  
City of Tucson, Arizona  
Comprehensive Planning Task Force  
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# **Mayor and Council**

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## **Comprehensive Planning Task Force**

**Albert Elias, Director**

**David Taylor, Planning Administrator**

**Autumn Figueroa, Principal Planner**

**Vickey Bagley, Planning Technician**



## Indicators of Neighborhood Stress

### History

In the late 1970s and early 1980s, the City of Tucson began studying different ways to evaluate the needs of its neighborhoods. City staff researched how other communities assessed neighborhood needs, but discovered that there are no national standards or thresholds with which to compare neighborhoods. No methods were found that would realistically tell community leaders when an area needed assistance. Therefore, twenty years ago the City developed a new and – as far as we know – unique approach.

Before developing the Indicators of Neighborhood Stress, staff did extensive research on using social indicators to predict community need. From this research, it became clear that data used in the study must come from a reliable source, be at a low level of geography, be updated regularly, and be low-cost or free. Expensive surveys and data for large areas (cities, counties, school districts, etc.) did not meet the purposes of the study. The census sample data was the obvious choice, as it met all the requirements above and offered a number of variables that related to community need.

After the release of 1980 Census sample data, indicators were chosen. The focus was on indicators of housing and family needs that could be addressed by Community Development Block Grant programs. Since the original indicators were chosen in 1983, they have changed somewhat due to availability of data. But the criteria have been consistent: the variables reflect family and housing conditions that indicate dependency and need. They relate to economic status, shelter costs and conditions, and possible social dependency (i.e., youth, old age, disability; see Appendix 1).

### A Look Ahead

This study is based on sample data from the Census of Population and Housing, which historically has been collected once every ten years. Near the end of each decade, decisions that are made using census sample data are based on very old information. In an effort to make timely data available, the U.S. Census Bureau has begun collecting sample data by means of the American Community Survey (ACS). If fully funded, the ACS will provide sample data every year beginning in 2004.

This opens up the possibility of more accurately determining whether neighborhood conditions are improving or declining. Although the decision to provide assistance to neighborhoods requires human judgment and therefore does not lend itself to threshold values, it may be possible to establish a threshold beyond which neighborhoods are more thoroughly studied to determine if assistance is appropriate. Yearly updates of sample data from the ACS could also provide budget benchmarks, to help determine whether past assistance served to improve conditions in the neighborhoods.



## Methodology

Because there are no national standards or thresholds, staff decided that the best course of action was to measure the County's neighborhoods against the average condition of the County as a whole. Therefore, the statistical method used measures areas in standard deviation units from the mean of the County. Each variable contributes equally to the overall composite score, as there is no credible basis for differential weighting.

Individual scores were standardized or normalized to remove differences in scale and variation among the variables. This process created variables whose means are zero and whose standard deviations are plus and minus 1. A score of +1.5 indicates that the area's score was 1.5 standard deviation units greater than the mean score of the Tucson area. Therefore, higher scores indicate higher stress. An overall, or composite, score was obtained by averaging all twenty-seven scores. Areas with scores greater than average were deemed to be "stressed." There is no consideration of whether the area's overall condition is good, bad, or indifferent. The scores reflect only population and housing variables. Highly relevant matters such as nutritional status, health status, recidivism, crime, et cetera, were not included in this approach (see Caveats, below).

## Caveats

Caution must be exercised in using these data and in interpreting their meaning. The items below must be taken into consideration when using this study.

1. **Thresholds:** There is no threshold beyond which an area automatically receives assistance. Because decisions about assistance involve public monies and goods, they are innately political and require human judgment.
2. **Neighborhood Boundaries:** The data used in this study are from the sample survey of Census 2000, and are reported to the block group level. In urban areas, a block group consists of about eight to ten city blocks, and in rural areas may be much larger. It is important to note that block group boundaries do not necessarily match the boundaries of registered neighborhood associations.
3. **Household Individuality:** These scores indicate general housing and social conditions for groups of households. The scores are not qualitative assessments of an area's or a single household's spirit or vitality; rather, these scores are simple, mathematical indicators of population and housing facets indicative of need. Each household is unique and may be quite different from others around it. For example, areas with very high scores indicative of great need and dependency may have many healthy, vital households.
4. **Scope:** The scope of this study is limited to indicators of housing and social conditions. It does not include other important indicators of welfare, such as health, nutrition, crime, other programs in place, and the organizational resources or assets of



the neighborhood group. Areas scored as having very low need or dependency may in fact have serious issues that are outside the scope of this study.

5. **Neighborhood Scores Versus County Average:** This study measures neighborhoods against the average condition of the County as a whole. Therefore, it is not possible to say whether a neighborhood's score is good or bad, only that it is higher or lower than the County average. If the average condition of the County is very good for a particular variable, then areas that score medium-high stress for that variable may not be of high concern. Conversely, the County as a whole may struggle with some issues, meaning that there may be more concern for areas that score medium-high stress for variables related to those issues.
6. **Need for Additional Data on Neighborhoods:** These scores and rankings have no agenda. They are intended for use as supporting facts and are not intended to be a substitute for human judgment. This study is provided to assist in fuller assessments of areas to be supported by community resources, and is only one factor to be considered in evaluation of an area.
7. **Comparison With Previous Studies:** Because the County's average changes with each census, it is not possible to say whether a neighborhood improved over the decades. It is only possible to say that its rank changed or remained the same relative to the County average. Comparisons with previous studies are further complicated by the fact that neighborhood boundaries and block group boundaries can change between censuses. Also, variables may change from decade to decade due to changes in data availability.
8. **City of Tucson Data:** A separate Indicators of Neighborhood Stress was prepared for the City of Tucson. The City of Tucson study encompasses a larger area than the incorporated City limits, in order to account for block groups that straddle or touch the City limits. These areas contribute to the City average and are shown on the corresponding map; data for block groups that are not shown on the Tucson Composite Stress Index Map do not count toward the overall composite score. Therefore, the same block group may have different standardized scores for the City of Tucson study and the Pima County study.

## APPENDIX 1 - NEIGHBORHOOD STRESS ELEMENTS

Neighborhood Stress scores are based on information obtained from the 2000 Census of Population and Housing, Summary File 3. This report provides an index of population and housing characteristics that can be used as supporting information in targeting areas for housing rehabilitation and implement programs to support and nourish those in need. This report identified 27 data items from the 2000 Census which were judged the best indicators of social dependency and housing need. The specific factors identified include the following:

### *1. Minor Population*

Persons 17 years old or less as a percentage of the total population.

### *2. Elderly Population*

Persons aged 65 years or more a percentage of the total population.

### *3. Pre-School Proportion*

Children 4 years or less as a percentage of the total youth population aged 17 years or less.

### *4. Dependency Index*

Ratio of youths (17 years or less) and elderly (65 years or more) to working age persons (18 – 64 years).

### *5. Fertility Index*

Number of children less than 5 years of age per 1,000 women aged 15 to 44 years of age.

### *6. Linguistic Isolation*

Households in which all persons 14 years of age and over have at least some difficulty speaking English as a percentage of all households.

### *7. Disability*

Civilian, noninstitutionalized persons 15 years and over with a disability as a percentage of all civilian, noninstitutionalized persons 15 years and over.

### *8. Poverty Status - Persons*

Persons below the poverty level as a percentage of all persons for whom poverty status is ascertained.

### *9. Poverty Status - Families*

The number of families below the poverty level as a percentage of all families for whom poverty status is ascertained.

***10. Poverty Status - Elderly Persons***

Persons 65 years or over who are below the poverty level as a percentage of all persons 65 years or over.

***11. Educational Attainment***

Persons aged 25 years and over who have completed less than 4 years of high school as a percentage of all persons 25 years and over.

***12. Unemployment Rate***

Unemployed persons 16 years and over who are in the civilian labor force as a percentage of all persons 16 years and over in the labor force.

***13. Not Working in 1999***

Persons 16 years and over with no employment in 1999 as a percentage of all persons 16 years and over.

***14. Working Mothers***

Females 16 years and over who are in the labor force and have children under 6 years of age as a percentage of all females 16 years and over with children under 6 years of age.

***15. Female Householder***

Families who have a female householder with related children under 18 with no husband present as a percentage of all families with related children under 18 years of age.

***16. Neighborhood Instability***

Persons 5 years old and older who lived in a different house five years ago as a percentage of all persons 5 years old and older.

***17. Crowding***

Housing units which have more than 1.01 persons per room as a percentage of all occupied housing units.

***18. Sanitation/Crowding***

Housing units that lack plumbing for exclusive use and which have more than 1.01 persons per room as a percentage of all occupied housing units.

***19. Plumbing***

Housing units that lack plumbing for exclusive use as a percentage of all housing units.

***20. Housing Age***

Housing units built before 1940 as a percent of all housing units.

***21. Kitchen Facilities***

Housing units which lack complete kitchen facilities as a percent of all housing units.

**22. Heating Fuel**

Occupied housing units lacking adequate heating fuels, i.e., that use fuel oil or kerosene, wood, coal, or no fuel at all, as a percentage of all occupied housing units.

**23. Vacancy Rate**

Vacant housing units as a percentage of all housing units.

**24. Owner Costs**

Owner households with incomes less than \$20,000 with owner costs exceeding 34% of their income as a percentage of specified owner occupied housing units.

**25. Renter Costs**

Renter households with incomes less than \$20,000 with gross rent exceeding 34% of their income as a percentage of specified renter occupied housing units.

**26. Communications**

Occupied housing units with no telephone and with a householder aged 65 years or over as a percentage of all occupied units.

**27. Access**

Occupied housing units with no vehicle available as a percentage of all occupied units.

Information about population and housing characteristics is central in the assessment of community needs. These data are necessary but not sufficient in forming a comprehensive strategy for community development and betterment. These data can be used as supporting information in targeting areas for rehabilitation and renewal of the physical housing stock and for implementing programs to support and nourish persons in need.



## **MAPS:**

The distribution of stress index scores for block groups is portrayed on the following maps of Pima County.

## **APPENDIX 2. Listing of Pima County Block Groups in Rank Order by Stress Index**

Attached are ten pages listing the 617 block groups in Pima County from Census 2000 in rank order by their composite stress index scores. If a locality or 'neighborhood' name was known to us for these block group areas, it is indicated. These data exist in much more detailed versions but are briefly summarized here for ease of use. Contact the Comprehensive Planning Task Force for further details.